

**CORRELATION BETWEEN PLAYING DIGITAL GAME AND
STUDENT'S ENGLISH LEARNING ACHIEVEMENT**

AN ARTICLE

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CORRELATION BETWEEN PLAYING DIGITAL GAME AND STUDENT'S ENGLISH LEARNING ACHIEVEMENT

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Abstrak: Penelitian ini bertujuan untuk mengetahui hubungan antara memainkan permainan digital dan hasil pembelajaran bahasa Inggris siswa di kelas delapan SMP Bawari Pontianak tahun akademik 2012-2013. Penelitian ini melibatkan 35 siswa kelas delapan (VII B). Penelitian ini merupakan penelitian deskriptif. Data yang menjadi perbandingan nya yaitu berupa kuesioner dan hasil belajar siswa yang berasal dari guru yang mengajar. Kuesioner yang diberikan pada siswa terdiri dari 25 pertanyaan. Nilai hubungan antara dua variable ini di hitung dengan menggunakan rumus *Person Product Moment*. Adapun nilai dari analisis data tersebut adalah 0,86 yang berarti memiliki korelasi yang sangat tinggi. Kemampuan bahasa yang dominan adalah kemampuan membaca. Ditemukan 11 siswa dengan kemampuan membaca di atas rata-rata nilai 70.

Kata Kunci: Permainan Basis Digital, Hasil Pembelajaran

Abstract: The purpose of this research is to find out the correlation between playing digital game and students' English learning achievement for the eighth grade students of SMP Bawari Pontianak in Academic Year 2012 – 2013. This research involved 35 students of eighth grade (VIII B). This research was designed in the form of descriptive research therefore; the data of this research were obtained by administering the questionnaire and students' English learning achievement score taken from the English teacher's handbook. The questionnaire tested on 35 students with 25 questions. This research used Person Product Moment formula to see the correlation value. The result of analyzing data found that the correlation between playing digital game and their English learning achievement score were 0.86 which categorized by high correlation. The most dominant skill acquired is Reading skill. Based on the finding, it is found that there were 11 students got high level (above 70) deals with students' response score and the rest of them are below 70.

Keywords: Digital Game, Learning Achievement.

In language teaching games have often been used to stimulate motivation and authentic communicative practices, as games have been conceptualized as the “the fun factor” of language learning (Warschauer and Healey 1998, 60) cited in Sorenson and Meyer (2007: 561). In informal settings, games have often been associated with the leisure activities of children as gaming is a central activity in children's off school practices with languages. In this context, languages (specifically English) have often had to be learned and used by children in order to engage and participate in games (Sorenson and Meyer 2007, 561).

The Digital games are electronic, interactive games known for the vibrant colors, sound effects, and complex graphics (Prensky, 2001:67). According to Aarseth, (2003:12) the digital game is a process rather than an object, there can be no game without players playing. The gamer students has important role to decide what they might play or how to run the game properly. It is possible for them to make some improvements in learning English, because the digital game is a process, not the object. It is more emphasized on process; the process means how to play the game. Playing digital game is the cognitive process in accomplishing the mission. The gamer student used to be active in reading the mission tutorial and comprehend it well. It is not only reading but also texting the message to the other player in a short time.

The transformation of technology based language teaching and learning may be summed up in the claim that the role of technology in language learning has been moving away from an association with drills, grammatical explanations and translation tests, into more communicative based contexts where task-based, project-based and content-based approaches are integrated with technologies (Sorenson and Meyer 2007:561). The teacher centered method has been faded away by the technology; the learner centered has become a mainstream in the present day. The gamer students learn English by their own and the digital game as their media in acquiring the language. As argued by Kern and Warschauer (2000) cited in Sorenson and Meyer 2007:561 language teaching has in this process not only become considerably more complex, but also “more exciting”. The students in SMP Bawari Pontianak are take pleasure in informal situation, then the English teacher supposed to use media [digital game] to make formal situation turned into informal situation. By using an appropriate media, the English teacher has opportunity to make his class being enjoyable by the students.

For those realities, the researcher wants to find out the correlation between the students who usually play digital game and their English learning achievement for eighth grade of Junior high school student SMP Bawari Pontianak.

METHOD

The purpose of this study is to analyze the correlation between playing digital game and English achievement, so that the researcher realized that a correlation study was the appropriate method because the main purpose of a correlation study is to determine relationships between variables, and if a relationship exists, to determine a regression equation that could be used make predictions to a population (Simon and Goes, 2011 cited in Eli).

The data for this research collected through a set of questionnaire and students' learning English achievement score taken from the English teacher handbook of Eighth grade in SMP Bawari Pontianak. Questionnaire is a series of questions asked to individuals to obtain information deals with the factors that influence student's learning English achievement score who playing digital game.

The population of this research is the junior high students in SMP Bawari Pontianak in academic year 2012/2013. A sample is a group of people or events drawn from a population. The samples of this research are one class of eighth grade (VIII B) that consist of 35 students in SMP Bawari Pontianak.

In conducting (design) the questionnaire, the researcher observed the eighth grade SMP Bawari' syllabus. The researcher found that there are six aspects that need to be achieved by the students; vocabulary, grammar, listening, speaking, writing and reading. So that the syllabus has become the main guideline to design the questionnaire. But not only the six aspects, but also the possible activity in playing digital game, they both are combined in order to correlate between playing digital game and students' achievement in the classroom. The table of specification will describe the six general aspects in syllabus which being asked in the questionnaire. The table of specification can be seen as follows:

Table I
The Specification Table of Questionnaire Items

NO	Aspects being asked	Items Number
1	Vocabulary	1-5
2	Grammar	6-9
3	Speaking	10-13
4	Listening	14-16
5	Writing	17-19
6	Reading	20-25

After conducted the questionnaire, the researcher was going to test the validity and reliability of the questionnaire.

An instrument is valid when it can express the measurement by the instrument. This study used Microsoft Excel for the calculation in finding out the validity of questionnaire item by using Pearson Product Moment Correlation Formula.

The Formula Used to test the item validity is:

$$r = \frac{\sum x.y}{\sqrt{\sum x^2 \sum y^2}}$$

An item is said to be valid if the “r” value is higher than “r” critical (0,3), (Sugiyono, 2001 : 103).

An instrument is reliable when the answer of the correspondents is consistent from time to time. Consistency of the result is the basic concept of

reliability of the test. Reliability can be defined as the extent to which a test produces consistent results when administered under similar conditions (Hatch and Farhady1982 : 244) cited in Eli.

The reliability of instrument was checked by using alpha formula:

$$r = \left[\frac{k}{(k-1)} \right] \left[1 - \frac{\sum \sigma_b^2}{\sigma_t^2} \right]$$

Where : r = the reliability of instrument

 k = Number of the items

$\sum \sigma_b^2$ = the number of the item variance

σ_t^2 = the total variance

To determine the standardize measurement, this research uses Guildford Classification. Here is the classification.

Table II
“r” Reliability Coefficient Correlation

No	“r” Coefficient	Correlation
1	0.00-0.20	Very Low
2	0.20-0.40	Low
3	0.40-0.70	Moderate
4	0.70-0.90	High
5	0.90-1.00	Very High

Student’s learning English achievement Score used to get the data for the student’s English learning achievement taken from English teacher’s handbook in of Eighth grade class in SMP Bawari Pontianak. This achievement score gained through the students’ attendance score, student tasks’ score, student activities’ score in the class, mid-term test score and the final examination score.

In order to find out the factors of digital game’s contribution toward

student's English learning achievement, the data analyzed through three stages. Details about these data analysis described as follows:

The purpose of this analysis is presented the overall result towards the factors that digital game contributed in acquiring student's learning English achievement namely; Vocabulary, Grammar, Speaking, Listening, Writing and Reading. The scoring system to measure the students' response in playing digital game, this research used Likert Scale which is in lined with what stated by Sugiyono (2001 : 73) that : *"Skala Likert digunakan untuk mengukur sikap, pendapat, dan persepsi seseorang atau sekelompok orang tentang fenomena sosial"*. And the scoring system of Likert Scale is :

Table III
Likert Scale

Statement	Strongly Agree	Agree	Disagree	Strongly Disagree
Positive	4	3	2	1
Negative	1	2	3	4

All of the statements (questions) in the questionnaire affirmed as Positive, because all of them are match to the researcher hypothesis. After scoring system been done, the next step is summary the overall score and measure the "mean" of each students. By using this formula:

$$Me = \frac{\sum xi}{n}$$

Adapted from Sugiyono (2009:49)

Note :

Me = Mean

$\sum xi$ = Total score of student's response

N = (total number of questions) x (maximum score / question)

Correlation between variables is a measure of how well the variables are related. The most common measurement of correlation in statistics is the Pearson Correlation (technically called the Pearson Product Moment Correlation or PPMC), which shows the linear relationship between two variables. The researcher used Microsoft Excel to analyze the data by applying this formula

$$r_{xy} = \frac{n \sum XY - \sum X \sum Y}{\sqrt{n \sum X^2 - (\sum X)^2} \sqrt{n \sum Y^2 - (\sum Y)^2}}$$

$$r = \frac{n(\sum xy) - (\sum x)(\sum y)}{\sqrt{[n \sum x^2 - (\sum x)^2] [n \sum y^2 - (\sum y)^2]}}$$

Where ;

r : Correlation

x : Students' Playing Digital Game Score taken from questionnaire

y : Students' English learning achievement score taken from English teacher's record book

n : total amount of students who involved

Results are between -1 and 1. A result of -1 means that there is a perfect negative correlation between the two values at all, while a result of 1 means that there is a perfect positive correlation between the two variables. A result of 0 means that there is no linear relationship between those variables. It will very rarely get a correlation of 0, -1 or 1. The closer the value of r gets to zero, the greater the variation the data points are around the line of best fit.

Table IV
The Classification of Correlation Level

"r"	Explanation
0	No correlation
0,01-0,20	Very Low Correlation
0,21-0,40	Low Correlation
0,41-0,60	Mid-Low Correlation
0,61-0,80	MiddleCorrelation
0,81-0,99	HighCorrelation
1	Very High Correlation

In this stage of data analysis, the data will be measured in each aspects and the researcher used Microsoft Excel to analyze the data by applying this formula;

Vocabulary Average Score ; $\frac{\text{total amount of Vocabulary score}}{\text{number of students}}$

Grammar Average Score ; $\frac{\text{total amount of Grammar score}}{\text{number of students}}$

Speaking Average Score ; $\frac{\text{total amount of Speaking score}}{\text{number of students}}$

Listening Average Score ; $\frac{\text{total amount of Listening score}}{\text{number of students}}$

Writing Average Score ; $\frac{\text{total amount of Writing score}}{\text{number of students}}$

$$\text{Reading Average Score} = \frac{\text{total amount of Reading score}}{\text{number of students}}$$

FINDINGS AND DISCUSSION

A. Findings

a. The result of analyzing questionnaire

As stated on the chapter 3, the researcher going to test the validity and reliability of the questionnaire, this analyze used the Microsoft Excel in order to help the researcher in calculation and the result of this analyze can be seen on appendix 3 and 4. The result of this analyze showed that all of the questions are valid and reliable.

The next step is analyze on students' response against the questions, the students' response score gained from questionnaire with 25 questions and tested on 35 students of eighth grade (VIII B) students of SMP Bawari Pontianak (see Appendix 2). Based on data gained, it showed that the highest gaming score is 89, reached by respondent Id number S25, and the lowest score is 31 gained by respondent with ID number S3. There are 11 students who gained the score up to 70 namely S5, S7, S12, S13, S15, S16, S17, S24, S25, S30, and S33. The rest of them are lower than 70.

b. The result of correlation between students' response score and their English learning achievement score.

Based on the questionnaire score (student' response) and the students' learning English achievement score, the result of both variables can be seen on appendix 5. As mentioned previously, this study uses two variables namely students' questionnaire score (gaming score) as independent variable and students' English learning achievement score as dependent variable. In showing the correlation relationship between these two variables, researcher uses the Pearson Product moment formula and scatter plot diagram. From the scatter diagram below, shown that there is a high correlation between students' questionnaire score (Student's response) and students' English learning achievement score:

Pearson Product Moment formula:

$$r_{XY} = \frac{n \sum XY - \sum X \sum Y}{\sqrt{n \sum X^2 - (\sum X)^2} \sqrt{n \sum Y^2 - (\sum Y)^2}}$$

Where:

r : Correlation

x : Students' response score in questionnaire

y : Students' English learning achievement score taken from English teacher's record book

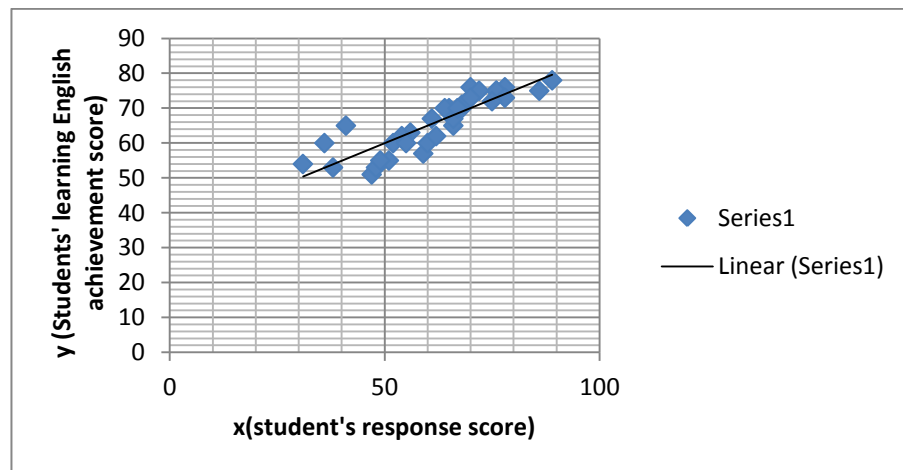
n : Total number of students

$$r = \frac{35(146.608) - (2.171)(2.311)}{\sqrt{[35(141.129) - (2.171)^2]}\sqrt{[35(154.767) - (2.311)^2]}}$$

$$r = 0.86$$

The result aboveshowed that 0,86 which means there is a high relationship between those two variables.

Scatter Diagram



The chart above shows that the pattern of the diagram is the positive linear/ positive correlation. Positive linear / positive correlation happens when the points move in the same direction, that is, when the X increases, so does the Y. From the scatter diagram above tell us when the X variable (students' response score) increasing, so the Y variable (English learning achievement score) will do so, and alternatively when questionnaire score decreased, so the English learning score will be decreased.

- c. The result of analyze on the most dominant aspect acquired.

In order to find the most dominant aspect in playing game, the researcher used Microsoft Excel by applying this formula (can be seen on Appendix 2), the result can be seen as follows;

Vocabulary Average Score ; $\frac{2110}{35} = 60$

Grammar Average Score ; $\frac{1685}{35} = 60$

$$\text{Speaking Average Score} \quad ; \frac{1768}{35} = 63$$

$$\text{Listening Average Score} \quad ; \frac{1245}{35} = 59$$

$$\text{Writing Average Score} \quad ; \frac{1305}{35} = 62$$

$$\text{Reading Average Score} \quad ; \frac{2745}{35} = 65$$

As the data shown above, the reading aspect is the most dominant skill acquired the students while playing digital game.

B. Discussion

Research analysed the relationship between variables; those are students' questionnaire response score from students and their English learning achievement score. This research conducted at SMP Bawari Pontianak. The researcher can conclude that there is a relationship that the playing digital game has influence to the students' English learning achievement score. Based on the data analysis, the researcher found that paying digital game has influence to the students' English learning achievement score, and the correlation between these two variables shows the positive high correlation, means when the questionnaires score is higher; the English learning achievement score will do so.

Based on the student's response score against the questionnaire conducted, the researcher found that there are eleven students who gained the score up to 70 namely S5, S7, S12, S13, S15, S16, S17, S24, S25, S30, and S33. The rest of them are lower than 70. Those eleven students are assumed as a gamer students because, their response's score almost equal to their English learning achievement score (see Appendix). It is proven that the gamer student acquired the language skills (aspects being asked in questionnaire). The researcher found that the most dominant language skill acquired is reading. It means that the gamer students used to read the mission tutorial carefully to accomplish the mission. The reading text in tutorial mission is narrative and descriptive text. The gamer student are always translate several difficult words by using Google translate. The gamer students are required to read the text as fast as they can. It appears about 5 seconds for a session including the narrator voice (NPC). It has two possibilities skill acquired; reading and listening skill.

CONCLUSIONS AND SUGGESTIONS

A. Conclusion

It is found that the correlation between playing Digital game and Student's English learning achievement categorized as High Correlation with the "r = 0,86". And also the researcher found that the dominant skill acquired while playing

digital game is Reading.

B. Suggestions

It is important for the English teachers in SMP Bawari Pontianak (especially on eighth grade students) to provide some attractive digital games as a media to teach English frequently.

As the result of this research shown that the digital games have a good affect in learning English. It is a must for the English teacher in SMP Bawari Pontianak to conduct a good media, in short integrating digital game into the syllabus.

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